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Mr. Cassin read a paper, containing "Descriptions of new species of Birds of the genus *Cyanocorax*, Boie, specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia," which was referred to the following Committee, viz., Dr. Wilson, Mr. Gambel, and Mr. Townsend.

Professor Henry D. Rogers exhibited and explained his Geological Map of Pennsylvania, and also a "Section of the Southern Anthracite coal basin at Pottsville."

Dr. Leidy mentioned to the Society, that he had examined the hair of the Hottentot boy, and that his observations corroborated the statement of Dr. Morton, made at last meeting, that it was much compressed or flattened. Transverse sections varied in outline from an oval to a very compressed lenticular form.

February 29th, 1848.

Vice President MORTON in the Chair.

The Committee on Mr. Nuttall's paper, read 1st and 11th insts., reported in favor of publication in the Journal and Proceedings.

Descriptions of Plants collected by Mr. William Gambel in the Rocky Mountains and Upper California. By THOMAS NUTTALL.

* GAMBELIA. †

Natural order, SCROPHULARINÆ. Tribe, ANTIRRHINÆ.

Calyx 5-parted, nearly equal. *Corolla* hypogynous, the tube cylindrical, saccate at the base, orifice narrowly pervious, the border bilabiate, the palate rather prominent, smooth, upper lip erect; the lower spreading, all the segments nearly equal and oblong. *Stamina* four, arising from the base of the corolla tube, included, didynamous; no sterile filament: *anthers* bilocular, oblong. *Ovarium* bilocular, with many ovules, seated upon a glandular torus. *Style* simple clavate, entire. *Capsule* subglobose, 2-celled, opening below the summit by two or three irregular apertures. *Seed*, [not seen.]—A spreading bush, with verticillate, entire, coriaceous leaves, and axillary and terminal conspicuous scarlet flowers. Allied to *Galvezia*, but with a prominent palate and saccate spur at the base of the corolla.

G. speciosa.

HAB. In the island at Santa Catalina on the coast of California. Flowering in the month of February.

* GROSSOSOMA. ‡

Calyx 5-leaved, imbricated, somewhat coriaceous and persistent, the leaves unequal and concave, with colored margins. *Corolla* of 5 subsessile, oval petals. *Stamina* perigynous, about 25, on a fleshy disk; anthers adnate. *Ovaries* two

† In honor of Mr. William Gambel, a naturalist, who has explored Upper California, and made an interesting collection of the plants of that country.

‡ From *κροσσος* *fringe*, and *σῶμα* *a body*; in allusion to the fimbriate arillus.

to five, united at base into a short stripe, 1-celled; ovules many, attached to the ventral suture in a single crowded series. *Stigmas* thick and sessile, recurved. *Capsules* two to five, coriaceous and cylindric, opening longitudinally and inwards, many-seeded. *Seed* roundish-reniform, nearly surrounded by a deeply fringed arillus. Embryo not seen.—A Californian shrub, with alternate, entire, crowded, exstipulate leaves, and 1-flowered, short, terminal branchlets; flowers white.

C. Californica.

HAB. Abundant on the borders of streams in the island of Catalina, off the coast of Upper California. Flowering in February.

* TRIFOLIUM.

§. * *PHYSANTHA*. (*Involucrarium*.) With the calyx 5-cleft, one or two of the divisions smaller. *Corolla* marcescent. The vexillum transformed into a physiform sac, which at length envelopes the very small wings and monopetalous carina. *Stigma* capitate. *Legume* stipitate, 2 to 5-seeded, included in the calyx.

T. * *stenophyllum*. Annual, branching from the base; leaves ternate, smooth and linear, distantly serrulate; stipules subulate, sparingly denticulate; peduncles elongated, filiform, heads small and nearly round, the vexillum, at length, forming a membranous inflated sac of equal breadth throughout, embracing the small wings and small carina, which is monopetalous, with but one broad claw attached to the vexillum.

HAB. The island of Catalina, near Santa Pedro, Upper California. Flowering in February.

T. * *Gambelii*. Perennial and decumbent, smooth, branching from the base; leaflets roundish-oval or cuneate-oval, obtuse, very minutely and sharply serrulate; stipules membranaceous, dilated, entire, with subulate, slender points; peduncles about the length of the leaves; involucre about 8-cleft, the segments lanceolate, acuminate; teeth of the calyx trifid, or simple, with setaceous points; legume stipitate, 3 to 5-seeded; wings longer than the vexillum.

HAB. Island of Catalina, St. Simeon and Pueblo de los Angeles.

A large, robust species, with shortish branches, very large stipules, and heads of large flowers, which appear to have been whitish, with purple tips to the carina; heads of flowers 1 to 1½ inches across; the vexillum very wide below, so as to conceal the other petals; the wings and carina are also united; leaflets three-quarters of an inch long, and about the same breadth.

T. * *ciliatum*. ☉. Smooth and erect, but little branched; lower leaves on very long petioles; leaflets cuneate-elliptic or oblong, obtuse, minutely and sharply serrulate; bractes adnate, subciliate, herbaceous, entire and acutely acuminate; capituli axillar and terminal, rounded, many-flowered, destitute of involucre, but subtended by a cicatrised circle of points; the flowers attached to a cylindric torus, often ending in a long subulate point beyond the capitulum; segments of the calyx unequal, one of the teeth small, the rest lanceolate, sharply acuminate and bristly ciliated with stiff hairs; vexillum enclosing the other petals, which are small; legume flat, stipitate, about 1-seeded.

HAB. Pueblo de los Angeles, Upper California.

Stipules herbaceous; the leaves rather thick and strongly veined, with forked vessels; calyx nearly the length of the ochroleucous flower. This is again a *PHYSANTHA*, but with a proper involucre.

*T. *denudatum.* ☉. Smooth, stem erect, a little branched, lower leaves on very long petioles; leaflets obcordate or oboval, minutely and sharply serrulate; stipules membranaceous, entire and setaceously acuminate; capituli axillar and terminal, rounded, many-flowered, without an involucre, but with a cicatrised circle in its place, the flowers attached to a conic torus of the same structure: segments of the calyx subequal, linear-lanceolate, sharply acuminate, nearly the length of the small ochroleucous flower; pod stipitate, about 2-seeded.

HAB. With the above, which it much resembles, but the vexillum is not unusually inflated.

About a span high; a rather small annual, and very smooth in every part. Leaflets about three-quarters of an inch long, three to four lines wide. Flowers small, with the teeth of the calyx very long and conspicuous.

*T. *diversifolium.* ☉. Small and smooth, branching from the base; leaflets linear or oblong, obtuse, perfectly entire, or repandly and rather sharply serrulate towards the apex; stipules nearly entire, with subulate points; peduncles longer than the leaves; heads very small, 8 to 10-flowered; involucre 6 to 8-parted, the divisions entire, ovate, obtuse; calyx nearly half the length of the short flowers, the teeth simple and acute; legume 2-seeded.

HAB. Near St. Simeon, Upper California. Remarkable for the diversity of its foliage, some of the leaflets being linear and quite entire, others with the same slightly serrulate; in other plants they are cuneate-oblong, and even emarginate. The plant about a span high, with reddish flowers and a deep purple tipped carina.

ASTRAGALUS.

‡. *MICROLOBIUM.* Annual or perennial? Flowers various. Legume small, scarcely exserted beyond the calyx, 1-seeded.

*A. *Catalinensis.* ☉. Nearly erect and much branched; stipules ovate, distinct, leaflets linear, deeply emarginate, five to seven pair, as well as the stem, scattered with appressed hairs; flowers ochroleucous, in capitate heads; segments of the calyx subulate, obtuse, thickly clad with rough white and black hairs, the segments all inclined to the lower side; legume scarcely exserted, scabrous.

HAB. On the island of Catalina, in Upper California. Flowering in February.

*A. *nigrescens.* Annual; nearly erect and much branched; stipules ovate, acuminate; leaflets cuneate-linear, deeply emarginate, nearly smooth; flowers ochroleucous, in short oval spikes, at length nodding; segments of the calyx subulate, acute, clothed with shortish black hair; legume ovate, acute, and villous, a little exserted; cells 1-seeded.

HAB. With the above, which it greatly resembles, but different in the calyx and pod; flowers less crowded and pedicellate, the calyx not so deeply divided, nor clothed with such long rough hairs; bractes minute, chaffy, subulate; stipules partly united at the base.

PHLOX.

*P. *bryoides.* Densely cæspitose, very small; leaves closely imbricated in 4 rows, the ciliar pubescence extending beyond the points of the oblong-lanceo-

late, very acute short leaves; flowers scarcely exserted; segments of the calyx obtuse; those of the corolla cuneate, entire.

HAB. On the dividing ridge of the Rocky Mountains. (Nuttall.)

P. **nana*. Dwarf and many-stemmed, viscidly pubescent; leaves rather long and linear, acute, the upper ones alternate; peduncles few, from the terminal branches, and as well as the calyx, pilose; flower exserted, with the tube twice the length of the calyx segments; border of the corolla longer than the tube, segments cuneate, emarginate.

HAB. Near Santa Fé, Rio del Norte. Flower large and red. Stems, many from the same perennial root, 4 to 5 inches high; the lower leaves $1\frac{1}{2}$ inches long, from 1 to 2 lines wide, quite flat, and more or less clothed with a small glandular pubescence. Flowers few, and as large as any in the genus; segments of the calyx linear and acute; the tube of the corolla about twice its length. Corolla more than an inch across. Cells of the ovary 2-seeded.

POLEMONIUM **viscosum*. Dwarf; every part covered with a short, viscid pubescence; leaves nearly as long as the short flower stems, segments rounded, ovate or subcordate, very small and short; flowers in small terminal clusters; corolla much longer than the elongated lanceolate segments of the calyx; ovaries 2 or 3 to each cell.

HAB. On rocky ledges towards the sources of the Platte. Flowering in June. (Nuttall.)

GILIA.

G. **multiflora*. Biennial, erect and much branched from the base; stems low and pubescent; leaves pinnatifid, mostly trifid, segments narrow linear and mucronulate, above simple; flowers disposed to sessile or pedicellate axillary clusters; tube of the corolla about twice the length of the curved calyx; the segments of the corolla oblong and mucronulate; stamens somewhat exserted.

HAB. Sandy hills along the borders of the Rio del Norte, (New Mexico.) Flowering in August.

‡. **ALLOPHYLLUM*. Annual. Leaves dissimilar and broad, obscurely 3 to 5-parted, with distinct partial petioles. Stem diffusely branched, the flowers small, partly funnel-form, disposed in cymose racemes. Capsule oval, the cells 2-seeded; the seeds roundish, not angular. Closely allied to *Collomia*, but with the cells of the capsule 2-seeded.

G. **divaricata*. Annual, diffusely branched and subdecumbent, viscidly pubescent; leaves alternate, digitately united at the base; leaflets 3 to 5, lanceolate acute, attenuated into a petiole, two or four much smaller than the others; branches forked, ending in cymose racemes; calyx obconic, divided nearly to the base, enlarging with the ripening of the fruit; the segments lanceolate acute, viscid; corolla small and slender, the tube more than twice the length of the small calyx; segments of the border oblong; stamens somewhat exserted, anthers roundish.

HAB. Monterey, Upper California.

‡. **CHRYSANTHA*. Annual, pubescent. Leaves sessile, opposite, palmately divided, with entire linear segments. Flowers fastigiate, somewhat corymbose on filiform peduncles, (yellow) segments of the calyx acute. Corolla funnel-

form, with a short tube, the segments oval and entire. Anthers ovate. Stamens exerted beyond the throat of the corolla. Ovules in the capsule about 20.

*G. *aurea.* Corolla smooth, about twice the length of the calyx; segments of the leaves short and hispid, 3 to 6.

HAB. Santa Barbara. Flowering in April.

♀. Perennials or biennials, with the leaves often sparingly pinnatifid towards the extremity, or entire and linear, fleshy. Flowers in condensed clusters, capitate or in spikes, generally white. Corolla tubular, with a deeply 5-cleft, spreading border. Stamens shortly exerted or even with the summit of the tube. Stigmas very short. Ovaries 2 to 4 in a cell, rarely 1.—*ELAPHOCERA.

G. congesta. (Hooker.) Common in the Rocky Mountain region.

*G. *crebrifolia.* Perennial and branching from the base; leaves entire, linear, acute and fleshy, smooth, crowded so as to conceal the stem; flowers in capitate clusters; stamens exerted to the length of the corolla segments.

HAB. Big Sandy Creek of the Colorado of the West. Flowering in July. (Nuttall.)

*G. *spicata.* Perennial; leaves linear, fleshy; flowers in clusters, spiked; stem and calyx lanuginous, segments of the calyx linear acute and viscid; tube of the corolla exerted; stamens at the summit of the tube.

HAB. On the hills near Scott's Bluffs of the Platte. Flowers white, segments oblong. (Nuttall.)

*G. *trifida.* Biennial; radical leaves linear; cauline trifid towards the extremity, fleshy and smooth; flowers clustered in spikes; stem and calyx pubescent, segments of the calyx linear and very acute; tube of the corolla exerted; stamens at the summit of the tube.

HAB. With the above, which it greatly resembles, except in the leaves; cells of the capsule each with three or four ovules. About a span high. (Nuttall.)

*G. *pumila.* Perennial? branching from the base; flowers in terminal clusters, subtended by long leaves, woolly at their base; leaves fleshy, trifid at the extremities; segments narrow, linear, spinulose at points; corolla small, the tube exerted; stamens extending a little beyond the orifice of the tube.

HAB. Near the first range of the Rocky Mountains of the Platte. Flowering in May. (Nuttall.)

*G. (COLLOMIOIDES) *filifolia.* ☉. Erect and rigid; stems smooth below, nearly simple; leaves mostly trifid; the segments setaceous and rigid; capituli corymbose and whitely woolly; tube of the corolla about the length of the calyx; segments of the border lanceolate; stamens shorter than the corolla.

HAB. Near Santa Barbara, Upper California.

LEPTOSIPHON.

*L. *bicolor.* Branching from the base; leaves 3, 5 to 7-cleft, the lowest much shorter; lower segments oblong-linear, cuneate, the upper subulate, all more or less roughly ciliate; segments of the calyx subulate, lanceolate; tube of the corolla three times the length of the funnel-formed border, its segments oval and rounded; stamens about half the length of the border.

HAB. On moist rocks, on the Oregon near the outlet of the Wahlamet; the only place where we saw it. (Nuttall.)

FENZLIA.

F. **speciosa*. Copiously branching from the base, nearly glabrous; leaves linear, entire; flowers pedunculate, (concolor, nearly white?) border of the corolla as long as the elongated segments of the smooth calyx.

HAB. On the island of Catalina. Flowering in February.

F. **concinna*. ☉. Very dwarf and somewhat pubescent, branching from the base; leaves linear, flowers nearly sessile; segments of the calyx longer than the cup.

HAB. Near Santa Diego, Upper California. Flowering in May. (Nuttall.)

LEPTODACTYLON.

L. **cæspitosum*. Diffusely cæspitose, herbaceous and smooth; leaves imbricated, the segments about 3, flat, with sharp subulate points; the tube of the corolla exerted; segments cuneate, entire.

HAB. On the borders of the Platte, and hills near Scott's Bluffs. Flowering in May. (Nuttall.)

EUTOCA.

E. **albiflora*. ☉. Glandularly pilose and viscid; stem erect and branching; leaves broad-ovate, shortly petiolate, subcordate, angularly biserrate; racemes curved, elongated, many-flowered, calyx segments spatulate-linear, obtuse; corolla not much longer than the calyx; capsule many-seeded.

HAB. Santa Barbara, Upper California.

E. **speciosa*. ☉. Stem erect and simple; leaves broad-ovate, subcordate, doubly serrate, almost lobed, beneath strongly nerved, and, as well as the stem and calyx, hispid and viscidly glandular; racemes at the summit of the stem several, circinate, not elongated; flowers on short pedicels; segments of the calyx spatulate-linear; capsule with more than fifty roundish, very rugose seeds.

HAB. Near St. Diego, Upper California. (Nuttall.)

*EUCRYPTA. †

Calyx 5-parted, without external appendages; lobes oval or ovate. *Corolla* tubular campanulate, half 5-cleft, deciduous, without internal appendages; the lobes rounded; the æstivation with three segments exterior and two interior. *Stamens* 5, equal, arising from the base of the corolla, smooth, somewhat exerted; anthers small and oval, nectary none. *Ovary* depressed, globose, 1-celled; placentas 2, free, externally septiferous, each with four dissimilar ovules. *Style* elongated, very shortly bifid. *Stigmas* minute. *Capsule* 2-valved, dividing parallel with the placenta, presenting four roundish, rugose seeds; concealed in the adnate parietes, as it were, of each of these valves are, (when perfect,) two other seeds, which are even and elliptic! separated from the other seeds by a perfect membranaceous partition, parallel with the deep concavity of the valves, and each of these partitions is again divided internally by a proper transverse septum; so that the capsule is in fact 4-celled, with closed partitions, and the division of the adnate placentas presents the large circular cavity of the capsule, as if merely 1-celled, with two hemispherical valves! *Seed* with a corneous, large albumen; embryo straight, minute, central, not

† So called in allusion to the concealed cells of the capsule.

half the length of the albumen.—Annuals with bipinnatifid leaves with the flowers in loose racemes.

E. **paniculata*. Flowers in a loose terminal panicle; stem viscid; uppermost leaves pinnatifid, segments of the calyx oval, obtuse.

HAB. Near Santa Barbara, Upper California. Flowering in April and May.

E. **foliosa*. Leaves all bipinnatifid, hirsute; racemes not longer than the leaves; segments of the calyx ovate, acute.

HAB. With the above, which it much resembles, but a lower, less viscid plant, with rather smaller flowers and capsules.

COLLOMIA.

♀. Calyx obconic, scarcely cleft to the middle, with foliaceous segments. Flowers racemose, scattered. Intensely bitter to the taste.—*PICRACOLLA.

C. **linoides*. Leaves narrow-linear, scattered, ending in a short mucro; flowers small, scattered, subsessile, the calyx shorter than the tube of the corolla.

HAB. Banks of the Platte. (Nuttall.)

PHACELIA.

P. **canescens*. Canescent and hirsute; leaves spatulate, oblong or sublan- ceolate, entire; racemes condensed into circinate clusters; corolla twice the length of the calyx; stamens exserted, the filaments pilose.

HAB. In the Rocky Mountains and Blue Mountains of Oregon. (Nuttall.)

P. **glandulosa*. Annual or biennial, very pilose, with a soft, short, shining pubescence; the stems and calyx covered with blackish, viscid, resinous glands; leaves pinnatifid; the segments somewhat toothed, short and roundish; flowers shortly pedicellate in crowded circinate spikes; segments of the calyx oblong; stamens exserted; style pilose.

HAB. About Hams' Fork of the Colorado of the West, on dry, bare hills. (Nuttall.)

NAVARRETIA.

N. **minima*. ☉. Smooth, dwarf, depressed and branched from the base; leaves somewhat bipinnately divided, with few and divaricate, subulately sharp segments; floral leaves simply pinnately dissected; calyx with three of the segments usually entire; corolla longer than the tube of the calyx; ovary cells 2-seeded.

HAB. Plains of the Oregon, near Walla-Walla. (Nuttall.)

Seldom more than an inch high; segments of the leaves quite acicular; flowers small and white, the tube exserted a little beyond the calyx; the stamens slightly exserted.

ERIOGONUM.

E. **acaule*. Very dwarf, stemless and caespitose, the caudex much divided, leaves whitely tomentose, oblong-linear, reflected so as to be semi-cylindric; involucre wholly sessile, few flowered, 4 or 5-toothed, the teeth very obtuse.

HAB. On the summit of the Rocky Mountains, near the Colorado of the West, at the highest land. A very remarkable dwarf species, forming dense tufts, independent of the subterranean woody caudex, not an inch high, whitely

tomentose. Leaves about a line wide and about 3 or 4 long. Flowers yellow and bright, externally somewhat pubescent, as well as the germs.

E. **Andinum*. Stemless, cæspitose, the caudex much divided; leaves small and spatulate, wholly and whitely tomentose, reflected on the margin; scapes all radical, terminating in a single capitulum; involucre divided nearly to the base, the segments about 8, leafy; flowers yellow, small.

HAB. With the above. (Nuttall.)

With a woody brown subterraneous stem, terminating with cæspitose tufts of white, softly tomentose leaves; scape 2 or 3 inches high, with a small umbel of bright yellow flowers, which are pubescent externally, and reflected from the multifid involucre, which is divided into eight small, leafy appendages. Germ smooth. Stigmas rather long.

E. **denudatum*. Annual, very smooth, excepting the under surface of the leaves, which are tomentose; leaves all radical and small, roundish reniform, on long petioles; stems many, all from the base, naked and scapoid, terminating in a single involucre, or corymbosely terminated by 2 or 3; involucres double, the outer or bractes short and 3-cleft, the inner 8-toothed and strongly ribbed, bearing tufts of abortive filaments; perigonium smooth, (purple.)

HAB. In the Rocky Mountains of Upper California.

E. **racemosum*. Scape naked and whitely tomentose, as well as the elliptic ovate leaves, sparingly forked at the summit, with the solitary involucres sessile and forming a spike; involucre very woolly, obsoletely toothed, subtended by a 3-cleft sheathing involucre or bractes; perianth smooth, oblong, attenuated at the base, (flowers ochroleucous?)

HAB. Colorado of the West.

E. **ellipticum*. Suffruticose; barren branchlets at the base of the scapoid stem; leaves elliptic or oblong-elliptic, beneath whitely tomentose, above nearly smooth; umbel compound, the forked divisions and general umbel involucre; the involucels leafy and spreading; involucre campanulate, lanuginous, 6-cleft, the segments rather longer than the tube, very many-flowered; perianth exserted, oblanceolate, attenuated to the pedicel, smooth, (or pubescent?)

HAB. Rocky Mountains. (Nuttall.)

β. *megacephalum*. Leaves oblong, subelliptic; perianth pubescent; umbel simple.

HAB. With the above.

E. **geniculatum*. Suffruticose, low and considerably branched; stems clustered; leaves linear, somewhat oblong, revolute on the margin, pubescent above, tomentose beneath; umbels simple, of few rays, the involucre of the umbel long and leafy: proper involucre campanulate, many-flowered, lanuginous; the border many-cleft, the divisions spreading and nearly as long as the cup; flowers yellow, numerous and small, obconic, externally pubescent towards the base.

HAB. In the Rocky Mountains, on the western slope. (Nuttall.)

E. **cernuum*. ☉. Leaves all radical, round oval, upon longish petioles, very whitely tomentose beneath, less so above; scape smooth, two or three times dichotomous; involucres solitary, pedicellate, smooth, pedicels exserted, at

length cernuus; involucre bractes 3-cleft, acute, appressed; teeth of the involucre acute; flowers few and small; segments of the perianth undulated.

HAB. On the plains of the Oregon and in the Rocky Mountains. (Nuttall.)

*E. *microtheca.* Suffruticose and dwarf; stems slender and clustered, at first arachnoid tomentose; leaves linear-oblong, nearly smooth above, whitely tomentose beneath, shortly petiolate, the petiolate widened at the base; umbel two or three times di- or trichotomous, each division bracteate; the involucre small and distinct, pubescent, about 6-flowered; the teeth about six, ovate, obtuse; flowers yellow, very small.

HAB. On the sides of hills in Oregon, east of Walla-Walla. (Nuttall.)

*E. *campanulatum.* Leaves all radical, clustered upon a thickish caudex, linear-spathulate or narrowly oblong, narrowed below into longish petioles, whitely tomentose on both surfaces; scapes smooth and naked; umbel about twice trichotomous, few-flowered; bractes acute, a little tomentose on the margins; involucre campanulate, about 6 to 10-flowered, smooth, with obtuse teeth; perianth yellow, smooth.

HAB. On the western declivity of the Rocky Mountains. (Nuttall.)

*E. *brevicaulis.* Branches very short, arising from a woody caudex, clustered, tomentose; leaves linear-lanceolate, long and rather acute, attenuated into a very long petiole, whitely tomentose beneath, less densely above; upper scaphoid stem very smooth; the bractes acuminate, tomentose margined; umbel two or three times compounded, with very long rays; teeth of the campanulate involucre acute; flowers smooth, yellow, and very small.

HAB. On the upper plains of the Oregon. (Nuttall.)

*E. *gyrophyllum.* With a woody caudex; lower leaves clustered towards the base of the stem, oblong-lanceolate, acute, attenuated at the base, beneath tomentose and yellowish-white, above slightly pubescent and green; a verticil of leaves on the stem, about 6, subsessile oblong; umbel simple, of many short rays, with a leafy, spreading involucre, tomentose within and without, many-flowered, shallow and simple, with longish, reflected teeth; perianth smooth, exserted.

HAB. Rocky Mountains of the Platte. (Nuttall.)

*E. *angustifolium.* Suffruticose, with infertile branches towards the base; leaves fasciculated and verticillated, linear-acute, narrowed below, whitely tomentose beneath, greenish but pubescent above, a verticil of about six leaves on the short stem; umbel simple, subtended by long, leafy bractes; divisions of the many-flowered involucre reflected, pubescent; perianth reflected, smooth.

HAB. Western slope of the Rocky Mountains. (Nuttall.)

*E. *effusum.* Suffruticose; leaves linear, oblong, obtuse, beneath whitely tomentose, above pubescent, greenish; stem tomentose, two or three times trichotomous, divaricate; bractes ternate, lanceolate-acute; (flowers not seen.)

HAB. In the Rocky Mountains. (Nuttall.)

*E. *micranthum.* Leaves nearly all radical, arising from a thickish, woody caudex, linear-spathulate, or narrowly oblong-lanceolate, narrowed below into longish petioles, whitely tomentose on both surfaces; scapes, bractes and involucres tomentose; umbel decompound, pedicels of the second divisions very short, with about three involucres in each; bractes acute or acuminate; invo-

lucres campanulate, very small, the teeth obtuse; flowers smooth, small and yellow, dioicous?

HAB. In the Rocky Mountains of Oregon. (T. Nuttall.)

In aspect nearly allied to *E. campanulatum*, but with rather longer and narrower leaves, and the involucres most of them sessile.

*E. *album*. Nearly stemless, with a woody caudex; leaves very whitely tomentose, spathulate-obovate, obtuse, usually longer than the petiole; bractes minute, appressed; umbel nearly simple, of few rays; involucre tomentose, angular, with shortish teeth; flowers numerous, smooth.

HAB. Rocky Mountains of Oregon. (Nuttall.)

*E. *rosmarinifolium*. Shrubby and much branched, smooth or somewhat pubescent; leaves clustered, nearly linear, revolute on the margin, slightly tomentose beneath; umbel pedunculate, compound, bractes leafy, numerous; involucres usually smooth, with acute teeth; perianth mostly glabrous.

HAB. Near Santa Barbara, Upper California. (Nuttall.)

β. foliolosum. Leaves more acute, with the petiole, young branches and the perianth, externally near the base, pilosely pubescent.

HAB. With the above.

*E. *verticillatum*. Biennial; stem dichotomously branching, the offsets all subtended by verticels of sessile, lanceolate, very acute leaves, in 3's; radical leaves oblong, as well as the stems and branches whitely tomentose, attenuated below into long petioles; flowers wholly unknown.

HAB. Near St. Diego, Upper California.

We have not seen the plant in flower, but the remarkable characters, somewhat resembling those of *E. tomentosum*, and unlike any other species, perhaps justifies our giving it a passing notice.

*E. *tenellum*. Densely caespitose, with a woody, multifid, short caudex; leaves roundish, ovate or elliptic, on short petioles, not exserted from the caespitose mass, whitely tomentose on both sides, as well as the scape and involucre; capitulum solitary, rather small; involucre cylindric, with obscure teeth, cluster of involucres 8 or 10 sessile; flowers small, purple; segments of the perianth oblong, not very unequal.

HAB. In the Rocky Mountains, on the western slope.

*EUCYCLA. †

Perianth membranaceous, colored, petaloid, dimorphous, the three outer divisions, orbicular, concave; the three inner linear-oblong, emarginate, connivent into a cylinder. *Stamens* 9, with short filaments, membranous at base. *Styles* three, of moderate length, with small, capitate stigmas. *Achenium* attenuated, triangular. *Embryo* excentric; radicle superior; cotyledons flat.

*E. *ovalifolia*. Leaves all radical, short and roundish-ovate, whitely tomentose; capitulum made up of several sessile, whitely tomentose involucres; outer segments of the yellow perianth rather narrower at base, the inner emarginate segments exserted.

Eriogonum ovalifolium. Nutt. Jour. Acad. Nat. Sci., Philad.

HAB. Sources of the Missouri. Flowers bright yellow.

† In reference to the circular figure of the perianth.

*E. *purpurea*. Leaves all radical, short and roundish-ovate, whitely tomentose; capitulum made up of several sessile, smoothish, tomentosely margined involucre; outer segments of the purple perianth orbicular, sometimes emarginate at base; the inner emarginate, narrow, segments scarcely exserted.

HAB. Rocky Mountains of the Platte.

Scape about a span high, arising from a multifid woody caudex; flowers larger than in the preceding and purple; filaments much shorter than the perianth, with a torn membranous margin at base; three stamens seated on each of the inner narrow segments; embryo rather short.

CHORIZANTHE.

*C. *nudicaule*. Annual; radical leaves narrow spathulate, pubescent, with long, slender petioles, tomentose beneath; scapiform stem nearly naked, the summit trichotomous, the branchlets once or twice bifid, the flowers cymosely conglomerated; stem and very unequal toothed involucre lanuginous; segments of the sessile exserted, perianth oblong, obtuse.

HAB. Santa Barbara, Upper California. Flowering in April.

*C. *angustifolia*. Annual and small; leaves all linear-spathulate, softly lanuginous, as well as the branches; stem trichotomous, the heads of flowers somewhat racemose; involucre pilose, with very unequal, uncinately spreading teeth, subulate to the base; perianth minute, the segments obtuse and without points.

HAB. Pueblo los Angeles, Upper California. Flowering in April.

*C. *discolor*. Annual or biennial, and rather dwarf; leaves all radical in a rosulate cluster; the primary nearly smooth, rather large, spathulate-oblong, obtuse or emarginate, rather smooth above, whitely tomentose beneath; the petioles, stem and involucre very hairy; the involucre with spreading, very unequal teeth subulate to their base; scape low, doubly trichotomous, the flowers in cymose clusters.

HAB. St. Diego, Upper California.

*C. *procumbens*. Annual or biennial, softly pilose; leaves spathulate, rather small; stem nearly naked, procumbent, the branches extremely divaricate and fragile, cymose; flowers in small clusters; involucre with the teeth subulate to the base, slightly uncinately, unequal; perianth segments oblong, entire, (yellow) pubescent.

HAB. With the above. Flowering in April and May. (Nuttall.)

A very remarkable species by its procumbent habit and extreme fragility; the branchlets and clusters of flowers disjoining into numerous fragments on the slightest touch, like a *Loranthus*.

*C. *uncinata*. Like the preceding, but with the teeth of the involucre strongly and remarkably uncinately and nearly equal; the tube is almost smooth and strongly ribbed; it is likewise yellowish, as well as the pubescent perianth.

HAB. With the above. (Nuttall.)

§. Perianth exserted; the segments oblong, deeply fringed towards their base, (red) styles very long—PTILOSEPALA.

*C. *fimbriata*. Annual; leaves all radical, spathulate-oval, pilose beneath; scape trichotomous; flowers in compound cymes; involucre pubescent,

the teeth subulate, unequal; perianth torn at the sides into long capillary fringe.

HAB. With the above. (Nuttall.)

PTEROSTEGIA.

*P. *diphylla* ☉. Pubescent; leaflets binate, each division obcordate or bilobed; common petiole on the lower leaves very long; achenium with the angles acute.

β. **biloba*. Leaves all nearly 2-lobed, the lobes somewhat emarginated.

HAB. Near Santa Barbara. Flowering in May.

*P. *microphylla*. ☉. Somewhat hirsute; leaflets binate, the lower ones twice compounded, divisions obcordate or unequally bilobed, the lobes sometimes with a single tooth; common petiole on the lower leaves elongated, the upper leaves sessile; achenium with obtuse angles.

HAB. With the above, which it greatly resembles, but always smaller leaved and more pubescent.

*NEMACALIS.†

Involucrum, none; the flowers monoicous, disposed in round clusters at the joints of the filiform stem, subtended and mixed with elliptical bractes. *Perianth* obconic, 6-cleft. *Stamens* 3. *Styles* 3, very short, with small subcapitate stigmas. *Achenium* ovoid, angular only at the summit.—Californian annuals, the leaves wholly, and the bractes on the upper side densely and whitely tomentose; stems smooth or viscid, filiformly elongated and nearly naked, with the flowers disposed in sessile round heads at the joints of the stem, and subtended and mixed with small, elliptical, emarginated bractes. The flowers resemble those of *Eriogonum*, but the habit, absence of involucre, and paucity of stamens, at once distinguish it.

N. **denudata*.

HAB. St. Diego, Upper California, in sandy places near to the sea shore. Flowering in April and May. (Nuttall.)

N. **foliosa*. With the above, from which it perhaps is not distinct; the leaves are much longer, the stem a little glutinous, and with most of the joints of the stem leafy.

*OXYTHECA.‡

Dioicous or monoicous. *Involucrum* small, 4 to 5-toothed, obconic, few-flowered, (3 to 5,) the teeth mostly spinulose. Female *perianth* closed to the summit, about 6-toothed; male and hermaphrodite shortly 6-cleft. *Stamens* about 6? *Achenium* compressed, 2-sided, elliptic. *Style* 3. *Embryo* excentric, in a somewhat fleshy perisperm, antitropus. *Cotyledones* oval, flat; radicle elongated, curved.—Annuals, with the leaves generally hirsute, nearly all radical, panicle or branches trichotomous and very divaricate, the ramifications subtended by verticillated bractes, free or united, into a cup. Involucres very small, solitary and pedicellate, 4 to 5-toothed, the teeth terminating in very long, sharp, rigid bristles, more rarely unarmed; perianth pubescent; the branches clothed with viscid, pedicellate glands. Somewhat allied to *Chorizanthe*, but with the involucre more than 1-flowered, and the achenium compressed.

† From the singular prostrate, thread-like stem.

‡ In allusion to the peculiar involucre.

O. * *dendroidea*. Leaves all linear, radical, hirsute; scape divaricately di and trichotomous; peduncles capillary; involucrum about 3-flowered; awns twice the length of the involucrum.

HAB. On the sand hills of the Rocky Mountains, near Lewis' River.

O. * *foliosa*. Leaves linear-lanceolate, hirsute; divisions of the trichotomous stem subtended by verticils of leaves; awns of the involucrum about its length.

HAB. With the above, which it much resembles; it is, however, a much stouter plant. The leaves about 2 inches long and 2 to 3 lines wide.

§. * *Gomphotheca*.—*Dioicous*. Annual; stem naked, verticillately branched and very divaricate. Involucrum small, about 5-toothed, 5-flowered; without awns.

O. * *glandulosa*. Leaves all radical, roundish and pilose; branches verticillate, branchlets very numerous and divaricate, the ultimate ones and pedicels capillary; flowers exserted, pubescent.

HAB. Rocky Mountains of Upper California.

* STENOgonum.†

Monoicous. *Involucrum* none. Flowers naked, in axillary clusters. *Perianth* triangular, 6-cleft. *Stamens* 6? *Styles* minute, with capitate stigmas. *Achenium* conic, triangular, the angles sharp and salient, with a margin. A small, smooth, rather succulent annual plant of the Rocky Mountains, dichotomously subdivided and branched; leaves entire opposite or ternate; flowers yellow, in axillary and terminal clusters, subtended by small, similar, leafy bracts. In the want of involucrum, approaching *Nemacaulis*, but the habit, flower and achenium are very distinct.

S. salsuginosum.

HAB. Bare saline hills of the Colorado of the West, in the Rocky Mountains. Flowering in June and July. (Nuttall.)

* HELIOMERIS.‡

Capitulum many-flowered, heterogamous; rays ligulate, in a single series, neuter; discal florets tubular, hermaphrodite. *Involucrum* irregularly imbricated and leafy, in about two series, and rather spreading. *Receptacle* conic, the palea embracing the florets, lanceolate and acute. *Corolla*, rays ligulate, (10—12,) those of the disk tubular, the tube short, throat wide and cylindric, border 6-toothed. *Stigmata* with oblong tips. *Achenia* laterally compressed, somewhat tetraginous, smooth, and without any pappus.

H. multiflorus.

A perennial tall herb, exactly resembling an *Helianthus*, with narrow, entire, somewhat scabrous leaves, the lower ones opposite; flowers yellow, terminal, numerous.

HAB. In Upper California, (Mr. Gambel,) and in the Rocky Mountains, collected by Mr. Gordon.

CHRYsOTHAMNUS.

C. * *depressus*. Suffrutescent and dwarf, nearly smooth; leaves rigid, lance-linear, very acute, 1-nerved; flowers in small corymbs; involucrum

† In allusion to the sharp and slender angles of the achenium.

‡ In allusion to its close affinity to *Helianthus*.

closely imbricated, the scales in 5 rows, lanceolate, acutely acuminate, smooth the lowest very small, 1-nerved and somewhat carinate : pappus fulvous.

HAB. In the sierra of Upper California. Nearly allied to *C. pumila*, but with a different involucre. Achenia smooth, 5-ribbed.

* OXYTENIA.†

Capitulum heterogamous, many-flowered, the marginal ones in a single series, apetalous and feminine. Florets of the disk tubular, masculine. *Involucre* composed of a single series of imbricated, ovate, rather rigid scales, (about 5.) *Receptaculum* small and flat ; its palea narrow, spatulate and membranaceous, tufted with long hairs.—MALE FLOWERS. *Corolla* obconic, with a narrow tube ; border 5-toothed. *Anthers* distinct.—FEMALE. *Corolla* none. *Stigmata* terete, filiform, smooth. *Achenia* bluntly obovate, obcompressed and ridged on the inner side, covered with dense white hairs, situated beneath the scales of the involucre and without pappus.

O. acerosa.

A large, erect, spreading bush, with the inflorescence of an *Iva* ; the leaves alternate, acerosely linear and rigid, pinnately divided into trifid or more compound divisions ; capituli sessile, arranged in a compound panicle, as in many *Artemisias*. The whole plant very bitter, but with very little aroma. In habit more allied to *Artemisia* than *Iva*. Appears to be nearly related to *Euphrosyne* of Decandolle, as well as to *Pycnothamnus* and *Cyclachena*, which last, however, is not sufficiently distinct from *Iva*.

HAB. Rocky Mountains, near Upper California. Flowering in October and November.

GNAPHALIUM.

G. * *ramosissimum*. Stem tall and stout, very much branched, the branches fastigate ; leaves and stem green but pubescent, the former linear-lanceolate, acuminate, strongly decurrent, viscidly pubescent ; heads mostly pedunculate in scattered corymbs ; scales of the yellowish-white involucre oblong-lanceolate, subacute, longer than the florets ; achenia smooth.

HAB. Monterey. Flowering in September and October.

STEPHANOMERIA.

S. * *elata*. Stems stout, erect, grooved and attenuated upwards ; leaves almost filiformly linear, the lowest somewhat pinnatifid, the upper laciniately toothed at the embracing base ; flowers in a small terminal panicle, (blue,) florets about 10 ; achenia cylindric-oblong, 5-grooved, somewhat rugose.

HAB. Santa Barbara, Upper California.

PTILOMERIS.

P. * *tenella*. Pappus of 8 to 10, cuneiform, obtuse fringed scales, in the rays minute ; involucre campanulate, about 8-leaved ; scales ovate, somewhat obtuse ; leaves mostly opposite, pinnatifid, the divisions few, narrow linear.

HAB. In the vicinity of Pueblo de Los Angeles, Upper California. Flowering in April. Very distinct from the *Hymenoxys Californica* of Hooker.

P. * *affinis*. Similar to the preceding, excepting the pappus, which is fimbri-

† From *εξυτμης* acuminate. In allusion to the rigid narrow foliage.

ate along the margin of the narrow scales, all terminating in awns, excepting the rays, which have the same short awnless pappus as in the preceding.

HAB. With the former. That these are true species, as well as the one which I called *P. coronaria*, I am persuaded by the fact of their retaining the same relative character when cultivated.

HEMIZONIA.

H. **decumbens*. Annual, hirsute, pubescent; heads nearly solitary at the summit of the branches; leaves entire, linear, rather obtuse; rays 10 to 15, cuneate, 3-lobed; achenia rugose, with a short, curved beak; pappus of the disk flowers none.

HAB. Near Monterey. A good deal resembling *H. fasciculata*.

♀. Heads hemispherical, many-flowered, corymbose; rays 20—25, receptacular chaff, in a single series, not united; pappus none; leaves pinnatifid.—MADIOMERIS.

H. **macrocephala*. Annual? hirsute; leaves irregularly pinnatifid, acute, upper one entire and sessile; flowers subcorymbose, head hemispherical, many-flowered; rays 20 to 30, cuneate, 3-lobed; achenia incurved, rugulose, with an oblique apex and stipitate at the base.

HAB. At St. Simeon, Upper California.

MONOLOPIA.

M. **lanceolata*. Young branches and leaves at first somewhat tomentose, at length nearly smooth; leaves oblong-lanceolate, distantly and irregularly toothed, sessile, all alternate, above entire and amplexicaule, acute; peduncles tomentose; leaves of the involucre usually 8, ovate, divided nearly to the base; rays a little longer than the disk; florets all fertile; receptacle conic, smooth, with projecting papillæ.

HAB. Pueblo de los Angeles, Upper California. Flowering in April.

ERIGERON.

E. **stenophyllum*. Nearly smooth, stem even and cylindric, corymbose at the summit; leaves filiform, rather numerous and scattered, minutely scabrous; involucre about 3 series, scales linear-lanceolate, acute; rays numerous, elongated, (30 or more,) 2 to 3-toothed; pappus fulvous, scabrous, with an outer short white series; achenia nearly smooth and compressed.

HAB. In California, (Monterey?)

CHÆNACTIS.

C. **denudata*. Biennial; glandularly pubescent; peduncles exceedingly long; involucre viscidly pubescent, rather tomentose; scales linear-lanceolate; ray-flowers irregular, expanded, shorter than the disk.

HAB. Pueblo de los Angeles, Upper California.

DIETERIA.

♀. Involucre hemispherical, the scales linear and acute; achenia obovoid and compressed, in the young state with numerous striatures, at length covered with a silky villus; pappus of several series of unequal scabrous bristles, the outer series shorter and more slender, (those in the ray, as in the rest of the genus, much shorter and less numerous.) Biennial or perennial, leaves pinnately lobed or incised; the lobes ciliated or pointed with bristles. Receptacle fimbriate or chaffy. Flowers of one color.—SIDERANTHUS. (Perhaps a genus.)

*D. *gracilis.* Biennial, erect; stem pilose, branching above, the 1-flowered slender branchlets forming a fastigate corymb; lower leaves pilose, pinnatifid; the segments oblong, obtuse, upper leaves linear, simple and sessile, entire, or minutely toothed, strongly ciliated with slender white bristles, which terminate all the lobes of the leaves; involucre not viscid.

HAB. Santa Fé, (New Mexico.) Flowering in August.

MICROPUS.

*M. *heterophyllus.* Annual, erect, simple, slender; densely lanuginous above, tomentose below; leaves below linear acute, above lanceolate, obtuse and sessile; capituli lateral and terminal, more densely lanuginous; discal florets about 5, masculine 3 to 5.

HAB. Santa Barbara, Upper California. Very nearly allied to *M. augustifolius*, but the heads appear larger and more woolly, and the upper leaves are different.

POLYPAPPUS.

*P. *sericeus.* Shrubby; younger branches and leaves sericeous; branches very leafy, ending in small corymbose clusters of flowers; leaves lance-linear, 1-nerved, entire, acute, at length nearly smooth; achenia smooth.

HAB. In Upper California, towards the Rocky Mountains.

BULBOSTYLIS.

‡ **Psathyrotus*.† Annual, and dichotomously branched; involucre of a nearly single series of loosely imbricated, slightly striated scales; pappus short and scabrous, shorter than the florets; style not bulbous; achenia turbinate, densely villous.

*B. *annua.* Very dwarf and dichotomously branched, clothed everywhere with greenish furfuraceous scales, and somewhat viscid; leaves cuneate-obovate, toothed at the apex; flowers nearly sessile, crowded into an irregular corymb.

HAB. Rocky Mountains, near Santa Fé.

QUERCUS.

Q. Gambelli. Leaves obovate, shortly petiolate, narrowed below, sinuately lobed, dilated and somewhat 3-lobed at the summit, beneath pubescent, the lobes rather obtuse, the upper one subdentate; fruit sessile, small, the cup hemispherical, scales ovate-acute; the glands ovate and acute, about half immersed in the cup; the conic summit short.

HAB. On the banks of the Rio del Norte, but not abundant. With the aspect of our northern oaks, but very distinct; in the leaf approaching a little to *Q. obtusiloba*, but without any near affinity.

OROBANCHE.

*O. *multiflora.* Pubescent; branching from the base; flowers subimbricated, scales lanceolate-acute; peduncles very short; flowers purplish, recurved; calyx deeply 5-cleft, bibracteate at base; segments long and linear; anthers tufted with hairs.

HAB. Sandy ground along the borders of the Rio del Norte. Flowering in September.

† In reference to the extreme fragility of the branches.

ASCLEPIAS.

A. **macrophylla*. Stem erect and smooth; leaves verticillate in 3's or 4's, very long and smooth, linear-lanceolate, below and on the branches opposite, on very short petioles; peduncles shorter than the leaves; umbels and flowers rather small and smooth; lobes of the corolla oblong-ovate; process of the nectaries strongly curved, acute; style of the nectaries rather short.

HAB. Near Monterey, Upper California.

STANLEYA.

S. **fruticosa*. Smooth; leaves lanceolate, entire, or sparingly denticulate, attenuated into a longish petiole; lamina of the petals longer than the claws; style more than twice the length of the pedicel.

HAB. Rocky Mountains of California. A shrubby species, with flowers very similar to those of *S. pinnatifida*. Leaves 2 to 2½ inches long, less than half an inch wide, the uppermost linear, all thick and apparently succulent.

BARTONIA.

B. **multiflora*. Biennial? stem smooth, white and shining, corymbosely branched; leaves narrow-lanceolate, sinuate, pinnatifid, attenuated below and sessile; flowers subtended by one or two linear bracts; petals 10, oblong-oval, obtuse; capsule urceolate, with three to four valves; segments of the calyx long and subulate; seeds in a double series, winged.

HAB. Sandy hills along the borders of the Rio del Norte. Santa. Fé, (Mexico.) Flowering in August.

NICOTIANA.

N. **caudata*. Annual; leaves lanceolate, sessile, acuminate with very long caudated points; flowers conglomerated in a terminal panicle upon short peduncles; segments of the calyx and corolla much acuminate.

HAB. Near Monterey, Upper California.

ERIODYCTION.

E. **angustifolium*. Stem and younger leaves glutinous; leaves long, linear, entire, revolute on the margin; beneath canescent and reticulated flowers small, in paniculate cymes; sepals linear, somewhat hirsute.

HAB. On the sierra of Upper California; not seen in flower.

HUMULUS.

H. **Americanus*. Leaves 3 to 5-lobed, the upper sometimes entire; inner divisions lanceolate-acuminate, denticulate along the apex; scales of the cone ovate, acute, the lower ones acuminate.

HAB. Throughout the United States in alluvial situations. I have also most luxuriant specimens from the borders of streams (Ojito de Navajo) in the Rocky Mountains, near the line of New Mexico, collected by Mr. Gambel.

*CALYCODON.

Spikelets, 1-flowered, the flower sessile, bearded at the base. *Glumes* 2, unequal, shorter than the flower, membranaceous, the lower truncate, acutely 3-toothed, the lower smaller, 1-toothed. *Paleæ* 2, the lower sub lanceolate, carinate, terminating in a longish scaprous awn, at length indurated, with a silky

pilose margin; the upper palea lanceolate, 1-nerved, indurated and involute. *Anthems* 3. *Stigmas* 2, plumose.—A scabrous leaved grass, with a simple inarticulated culm, terminated by a loose, narrow, somewhat spiked panicle. So called in allusion to the remarkable toothing of the calyx.

C. montanum.

HAB. In the Rocky Mountains, near Santa Fé, Mexico. Flowering in August.

MUHLENBERGIA.

($\frac{1}{2}$. **Trichochloa*) **purpurea*. Annual, dwarf; much branched from the base and many-jointed; glumes very short and obtuse; paleæ and awns purple, the latter capillary, many times longer than the palea, the inner one acute and shortly awned.

HAB. Santa Barbara, Upper California, and the island of Catalina.

CALAMAGROSTIS.

($\frac{1}{2}$ **TRICHAGROSTIS*.—Spikelets 1-flowered, the flower sessile, with long hairs at the base. *Glumes* 2, subequal, membranaceous, acute, longer than the flower, the lower with a short terminal awn. *Paleæ* 2, very acute, the lower carinate, ending in an exserted capillary awn, the upper 1-nerved, acuminate. *Caryopsis* free, cylindric-oblong, much shorter than the glume.

*C. *Andina.*

HAB. In Upper California, on the Colorado of the West.

FESTUCA.

$\frac{1}{2}$. **CHLOROPSIS*.—Spikelets unilateral, 2-flowered, or with the third abortive; flowers hermaphrodite, distichal. *Glumes* 2, carinate, unequal. *Paleæ* 2, the lower lanceolate, hirsute and concave, ending in a long, slender awn, the upper bicarinate. *Stamens* 1. *Ovary* sessile. *Styles* 2, very short, with plumose stigmas. *Caryopsis* lanceolate, smooth, concave above, nearly free.—A slender Californian annual grass, with a simple, filiform culm, ending in a small, nearly simple, spiked panicle; the spikelets sessile on a continuous, angular rachis, at length cernuus. So closely allied to the *CHLORIDÆ*, that at first I imagined it would prove a species of *Eutriana*; it is still, however, a *Festuca* in habit.

F. microstachys.

HAB. Pueblo de los Angeles, Upper California.

$\frac{1}{2}$. **TRACHYCARPHA*.—Spikelets many-flowered, secund, seated on the sides of a branching angular rachis. *Glumes* 2, the upper minute. *Paleæ* 2, the lower with a long awn and strongly ciliated on the margin. *Caryopsis* adhering to the upper palea.

F. megalura. Slender leaves and elongated, simple culm, smooth; panicle spiked, elongated, the branchlets angular and appressed; paleæ and their long awns very scabrous; uppermost floret of the spikelet abortive.

HAB. Santa Barbara, Upper California.

MELICA.

*M. *panicoides*. Panicle elongated, many-flowered, the flowers small and numerous; glumes 1-flowered, with a small, infertile rudiment; paleæ smooth, scarcely longer than the acute glumes.

HAB. Santa Barbara. Flowering in April.

*M. *pocæoides*. Panicle narrow, many-flowered, the spikelets erect; *spikelets* with two flowers perfect, and a small rudiment extending beyond the acute glumes; lower palea 5-nerved.

HAB. Santa Barbara, Upper California.

*STENOCHLOA.†

Spikelets about 3-flowered; flowers distichal, hermaphrodite. *Glumes* 2, awnless, lanceolate, acute, much exceeding the spikelet in length. *Paleæ* 2, awnless, the lower concave, ovate, nearly nerveless and pubescent, the upper bicarinate. *Stamina* 3. *Ovarium* stipitate. *Styles* 2. *Stigmas* plumose. *Caryopsis* free, oblong-lanceolate.

S. California.

HAB. Island of Santa Catalina.

*PLEOPOGON.

Spikelets 1-flowered. *Glumes* 2, unequal, nearly as long as the flower; the lower with two awns, the upper entire, with one awn. *Paleæ* 1, the lower oblong, with the apex produced into a short awn, the upper without awn and 2-nerved. *Stamens* 3. *Styles* 2. *Stigmas* pilose, slender.—Culm compressed, somewhat branched; leaves linear, short and rigid; spikes terminal, simple, not jointed.

P. setosum.

HAB. Mountains of Santa Fé, Mexico.

MONARDA.

*M. *pectinata*. Biennial? slightly pubescent; leaves oblong-lanceolate, denticulate, shortly petiolate; capituli proliferous, rather small, subtended by herbaceous bracts, some of them purplish, ovate-acute, strongly ciliated, as well as the elongated, setaceous teeth of the calyx; *corolla* widely ringent, the tube scarcely exerted beyond the calyx.

HAB. Near Santa Fé, New Mexico.

HEDEOMA.

*H. *ciliata*. Perennial; minutely pubescent, branching much from the base; leaves linear-obtuse, shortly petiolate, entire; flowers, two or three together in the axills; *calyx* hirsute, with long, unequal ciliate teeth; *corolla* about the length of the calyx.

HAB. In the Rocky Mountains, towards Santa Fé.

SISYMBRIUM.

*S. *reflexum*. Smooth; leaves somewhat lyrate pinnatifid, the terminal lobe toothed, upper leaves nearly entire and denticulate; flowers small; *petals* linear-spathulate, a little longer than the colored calyx; pods subterete, very long, nearly sessile, rigidly reflected and acuminate with the style.

HAB. Near St. Pedro, Upper California.

URTICA.

*U. *holosericea*. Perennial and tall; leaves opposite, large, on long petioles, cordate-ovate, acute, above lanceolate, coarsely serrated, smooth, beneath silky villous, as well as the stems and petioles, the latter also pilose; flowers

† So called in allusion to its macilent appearance.

tetrandrous, in axillary, filiform, compound racemes, the upper clusters styliferous only.

HAB. Near Monterey, Upper California.

PEUCEDANUM.

♀. Carpels with two of the lateral ribs undulately winged; vittæ indistinct, 1 or 2; commissure. . . . *PEUCELIMUM.

P. **abrotanifolium*. Somewhat pubescent, branching from the base; leaves ternately decompound, ultimate segments narrowly linear; involuclers about 7 to 9-leaved, the leaflets palmate, distinct, petiolulate, nearly as long as the umbellet; fruit obovate-elliptical, with a broad, winged margin, and some of the inner ribs with undulated membranaceous margins.

HAB. Pueblo de los Angeles, Upper California. (A single specimen, not far enough advanced to ascertain the ultimate character of the fruit.)

The Committee on Mr. Cassin's "Descriptions of two new species of *Cyanocorax*, contained in the collection of the Academy of Natural Sciences of Philadelphia," reported in favor of publication.

Descriptions of two new species of the Genus Cyanocorax, Boie, of which specimens are in the collection of the Academy of Natural Sciences of Philadelphia.

By JOHN CASSIN.

CYANOCORAX *Harrissii* nobis. Head crested, which, with the cheeks and entire front of the face and neck, to the breast, are brownish black. Occipital region and back of the neck, white, which color gradually blends into that of the back.

Upper surface of the body, wings and tail, glossy violet blue, darker on the wings and tail.

Under parts of the body, from the breast to the under tail coverts, including the latter, of the same color as the back, but more tinged with cinereous.

Inner webs of primaries, and under surfaces of the wings and tail, black.

Bill and legs black. Tail without white.

Total length of skin, from tip of bill to end of tail, about 14 inches, wings 8 inches, tail 7 inches.

HAB. Guayaquil, South America.

The specimen now described belongs to the Rivoli collection, and is labelled, "*Corvus de Guayaquil*."

This species belongs to the same group as *C. cayanus*, Linn, *C. cayanopogon*, Weid., and others, but may readily be distinguished from any described species, by the uniformity of the colors of the upper and under parts of the body, and also by the entire absence of white on the tail.

I have named this handsome bird in honor of Edward Harris, Esq., of Moorestown, New Jersey, the early friend and associate of Mr. Audubon, and author of various valuable contributions to the natural history of North America.

CYANOCORAX *concolor*, nobis. Entire plumage glossy ultramarine blue, except the inner webs of the primaries, and the under surfaces of the wings and tail, which are black. Bill and legs black. No crest whatever.

Total length of skin, from tip of bill to end of tail about $12\frac{1}{2}$ inches, wing $6\frac{3}{10}$ inches, tail $6\frac{1}{2}$ inches.

¹⁰HAB. South America.

This species, of which one specimen in the Rivoli collection is now described, is remarkable for the uniform color of its plumage, in which respect it differs from any other species known to me. It is, however, more nearly related to *C. viridicyanus* (D'Orb.) *C. ornatus* (Less.) and *C. armillatus* (G. R. Gray,) than to any others, from which I infer that it is, in common with those beautiful species, an inhabitant of the northern part of South America.

The Committee on Dr. Leidy's paper, entitled "On certain bodies resembling the Pacinian corpuscles in the *Boa constrictor*," reported in favor of publication.

On some bodies in the Boa Constrictor resembling the Pacinian corpuscles.

By JOSEPH LEIDY, M. D.

While engaged with my friend, Dr. Hallowell, a few weeks since, in dissecting the specimen of *Boa constrictor* presented to the Academy by Dr. Watson, I observed along the course of the nervi intercostales, at or towards their anterior extremity, a number of small, hard, rounded, or ovoid bodies, which, to the naked eye, had very much the appearance of the corpuscula Pacini of man and other mammifera, and such an opinion I expressed at the time to Dr. Hallowell.

These bodies average from three to seven in number to each nerve, and generally measure eight millemetres in diameter. They are white, shining, and opalescent in appearance, and are closely attached to the side of the nerve, enclosed within its sheath and projecting beyond its outline, instead of being attached to a pedicle derived from an adjacent nerve, as in the Pacinian corpuscle of man.

Upon investigating the structure of these bodies through the aid of the microscope, I find that they consist of a central, globular mass, measuring .33 millemetres in diameter, invested by a series of semi-transparent capsules in the neighborhood of fifty in number.

The central mass is semi-opaque, homogeneous, granular in structure, slightly yellowish in color, and has in most cases a darker and more consistent nucleus having apparently the same composition. Acetic acid had almost no influence upon it. With the greatest care, and the use of the highest powers of the microscope, I could discern nothing more than a finely granular constitution in it. A somewhat analogous appearance I have noticed in the nervous structure in the interior of the Pacinian corpuscle of the new-born child.

The capsules enclosing the central mass form a stratum of the same or one-third greater diameter; they are perfectly distinct from one another, are further separated by the endosmosis of fluid, and have the same appearance as those of the Pacinian corpuscle of man. Evidently fibrous, or composed of the white fibrous element, they are rendered quite translucent by the application of acetic acid. Upon their inner surface, at nearly regular distances from one another, are situated projecting, elongated oval or fusiform, a few sigmoid, granular nuclei, larger than those of the Pacinian corpuscle of man, and measuring .025 mil. in length, by .0075 mil. in breadth.

The outermost capsules become blended with the white fibrous tissue, forming the sheath of the nerve. No nerve fibril passes into the interior of these bodies, although from their great resemblance to the Pacinian corpuscle I had expected to

find such an arrangement. Generally I found them situated on one side of a nerve, projecting from the bundle of nerve tubules and enveloped in the same sheath, but in several instances I found them separating, or situated between several of the nerve tubes, the tubes so separated, after passing the bodies, resuming their position along with the others. Besides being invested by the nervous sheath, they are more closely held in connection with the nerve by means of transverse fibres of white fibrous tissue. After having thus discovered and examined these curious bodies in the Boa, I expected to find the same in other serpents, and I accordingly obtained a *Coluber constrictor* and *Leptophis sauritus*, into which I carried my comparative researches, but without finding the least trace of a similar or analogous structure. From their absence in these two serpents, it occurred to my mind that they might be the ova of entozoa—but the entire structure precludes any idea of this kind—and although they have several of the most important elements of structure of the Pacinian corpuscle, yet they have no nerve, of which as a conductor, if we consider the Pacinian corpuscle in any way the centre of any kind of nervous or other power, must be considered as a *sine qua non*; but if a mere filament of distribution, it would be comparatively of little importance, and the close apposition of the bodies with the nerves in the Boa, might possibly answer the same purpose. But if they are of the nature of the Pacinian corpuscle, why not exist in all serpents? In this maze of perplexity, I present these observations to the Academy, and hope that future researches will throw some light upon the subject.

Before finishing with these remarks, it may be important for me to state that I saw none of these bodies in any other situation in the Boa, than along the nerves mentioned, although I examined all other parts carefully, excepting the viscera and their attachments.

Explanation of the Figures.

Fig. 1. Represents a portion of an intercostal nerve of the Boa constrictor, with the sheath removed, and exhibiting five of the bodies which resemble the Pacinian corpuscle, acted upon by dilute acetic acid, and highly magnified. The upper three bodies on the left side, it will be observed, have separated some of the nerve tubules from the main body of the nerve. *a.* Central mass of granular substance; *b.* external investing capsules; *c.* nuclei of the capsules.

Fig. 2. Represents a portion of a nerve, with the sheath removed from one side, and one of the "bodies" with the sheath remaining upon the other side, acted on by dilute acetic acid, and more highly magnified than Fig. 1. *a.* nervi tubuli; *b.* fibrous sheath of the nerve; *c.* several primitive nuclei of the fibrous element of the sheath; *d.* one of the "bodies"; *e.* central granular mass; *f.* external investing capsules; *g.* nuclei of the capsules.

Fig. 3. Represents a portion of several of the capsules very highly magnified so as to exhibit the structure of the nuclei. *a.* capsules; *b.* nuclei.

Fig. 4. Represents the eye of *Balanus rugosus*, much magnified. *a.* optic nerve; *c.* vitreous body.

William E. Whitman, Esq., John Jay Smith, Esq., William R. Lej  , Esq., Henry C. Lea, Esq., and Francis F. Wolgemuth, Esq., all of Philadelphia, were elected *Members*, and the following were elected *Correspondents*:

Rev. William Scoresby, D. D., of England.

Jean Jaq. Kaup, of Darmstadt.